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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary****Application No.**

09/939,813

**Applicant(s)**

POOLE ET AL.

**Examiner**

Qing Chen

**Art Unit**

2191

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This Office action is in response to the RCE filed on February 19, 2008.
2. **Claims 1-24** are pending.
3. **Claims 1, 9, and 17** have been amended.

### ***Response to Amendment***

#### ***Claim Objections***

4. **Claims 1-24** are objected to because of the following informalities:
  - **Claims 1, 4, 5, 7, 9, 12, 13, 15, 17, 20, 21, and 23** recite the limitation “the Composer.” Applicant is advised to change this limitation to read “the Topological Multi-Tier Business Application Composer” for the purpose of providing it with proper explicit antecedent basis.
  - **Claims 2, 3, 6, and 8** depend on Claim 1 and, therefore, suffer the same deficiency as Claim 1.
  - **Claims 10, 11, 14, and 16** depend on Claim 9 and, therefore, suffer the same deficiency as Claim 9.
  - **Claims 18, 19, 22, and 24** depend on Claim 17 and, therefore, suffer the same deficiency as Claim 17.
  - **Claims 2-8** recite the category of invention “[t]he system.” Applicant is advised to change this category of invention to read “[t]he computer-implemented system” for the purpose of providing it with proper explicit antecedent basis.

- **Claims 10-16** recite the category of invention “[t]he method.” Applicant is advised to change this category of invention to read “[t]he computer-implemented method” for the purpose of providing it with proper explicit antecedent basis.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. **Claims 2-4, 6, 10-12, 14, 18-20, and 22** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**Claims 2, 10, and 18** recite the limitation “the icons.” There is insufficient antecedent basis for this limitation in the claims. In the interest of compact prosecution, the Examiner subsequently interprets this limitation as reading “icons” for the purpose of further examination.

**Claims 3, 4, 6, 11, 12, 14, 19, 20, and 22** recite a Markush group, where members are being “selected from a group comprising A, B, and C.” However, it is improper to use the term “comprising” instead of “consisting of.” *Ex parte Dotter*, 12 USPQ 382 (Bd. App. 1931). Thus, the alternative expressions present uncertainty or ambiguity with respect to the question of scope or clarity of the claims. See MPEP § 2173.05(h). In the interest of compact prosecution, the

Examiner subsequently interprets this Markush group as reading “selected from a group consisting of A, B, and C” for the purpose of further examination.

***Claim Rejections - 35 USC § 101***

7. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

8. **Claims 1-8 and 17-24** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

**Claims 1-8** are directed to a computer-implemented system. However, the recited components of the system appear to lack the necessary physical components (hardware) to constitute a machine or manufacture under § 101. Although the claims recite the system as being computer-implemented and that the IDE is executed by a computer, the mere inclusion of a computer environment in the claim language can be reasonably interpreted as an intended use limitation (*i.e.*, the computer is an intended use of the system and not structurally part of the system). Therefore, these claim limitations can be reasonably interpreted as computer program modules—software *per se*. Thus, the claims are directed to functional descriptive material *per se*, and hence non-statutory.

The claims constitute computer programs representing computer listings *per se*. Such descriptions or expressions of the programs are not physical “things.” They are neither computer components nor statutory processes, as they are not “acts” being performed. Such claimed

computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element, which defines structural and functional interrelationships between the computer program and the rest of the computer, that permits the computer program's functionality to be realized, and is thus statutory. See *Lowry*, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

**Claims 17-24** recite an article of manufacture embodying logic as a claimed element. However, it is noted that the specification describes the logic/data can be embodied in or readable from a media, carrier, or signal (*see Page 4: 9-14*). Consequently, the article of manufacture can be reasonably interpreted as carrying electrical signals.

Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism *per se*, and as such are non-statutory natural phenomena. *O'Reilly v. Morse*, 56 U.S. (15 How.) 62, 112-14 (1853). Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in § 101.

#### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. **Claims 1-24** are rejected under 35 U.S.C. 103(a) as being unpatentable over US **6,208,345 (hereinafter “Sheard”)** in view of US **6,854,107 (hereinafter “Green”)**.

As per **Claim 1**, Sheard discloses:

- an Integrated Development Environment (IDE), executed by a computer, for creating and maintaining a multi-tier business application on a multiple tier computer network, wherein the IDE includes a Topological Multi-Tier Business Application Composer that accepts commands from a developer, and in response thereto, graphically creates and maintains the multi-tier business application, the Topological Multi-Tier Business Application Composer includes a window and a palette, the palette contains graphical constructs representing tiers and components of the tiers that are used to create and maintain a graphical representation of the multi-tier business application in the window (*see Column 3: 16-18, “A visual interface facilitates the design, deployment, and runtime monitoring of an integrated information system (IDE) implementation.” and 24-26, “Various component icons may be packaged together in business extension modules (multi-tier business application) to provide users with specific business integration capabilities.”; Column 6: 11-13, “...facilitate the design, deployment, and runtime monitoring (Composer to graphically creates and maintains) of an integrated information system comprising a number of disparate applications.”; Column 23: 10-14, “... user design a data integration layout when the System Integration view is active by selecting*

*various adapters and components displayed in the palette of the visual interface. This is achieved by dragging selected adapters (icons) from the palette and dropping them onto the canvas (window) ...”; Column 24: 55-67, “... the presentation of a menu item which permits the user to invoke a distribution planning panel ... provides a tree view of the network environment (Topological Multi-Tier Business Application Composer) currently in operation for a selected data integration project ... indicate the names of the workstations ... indicates the various components operating on a particular workstation ... indicates details of either component of queue elements ...”).*

However, Sheard does not disclose:

- when creating the multi-tier business application, accepts commands from the developer, and in response thereto, creates and maintains a number of tiers, identifies workstations and servers within each of the tiers, and defines processing performed by each tier and its components.

Green discloses:

- when creating the multi-tier business application, accepts commands from the developer, and in response thereto, creates and maintains a number of tiers, identifies workstations and servers within each of the tiers, and defines processing performed by each tier and its components (*see Column 1: 16-21, “... the design of a software component architecture for the development of extensible tier software component applications ...”; Column 2: 48-54, “The present invention specifies a method and a system for creating architectures to implement an N-tier system wherein a software component designer can design or select each software component 20 to perform specified functionality and ensure that each software component 20*



*has the interfaces specified by the architecture for that tier 30.”; Column 3: 14-16, “GUID – Globally unique identifier, e.g. a number having a predetermined number of bits that uniquely identifies a software component (identifies workstations and servers)”;* Column 4: 4-6, “In a currently preferred embodiment, each tier 30 logically groups together software components 20 that have a similar type of behavior.” and 56-62, “... the present invention provides rules to define and create a particular N-tier architecture (creating a multi-tier business application) with a specified, initial number and type of tiers ... where each initial tier satisfies one of a major portion of system functionality (defines processing performed by each tier and its components), such as business logic ...” Additionally, it is inherent that correctly working software, designing a multi-tier business application would uniquely identify each component in the program. Also note that Sheard discloses workstations and servers.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Green into the teaching of Sheard to include when creating the multi-tier business application, accepts commands from the developer, and in response thereto, creates and maintains a number of tiers, identifies workstations and servers within each of the tiers, and defines processing performed by each tier and its components. Both Sheard and Green provide a visual interface to facilitate the design and satisfy the “need for an improved data integration system and methodology ... that is readily extensible (see Sheard – Column 3: 65-67 to Column 3: 1-8).” The modification would be obvious because one of ordinary skill in the art would be motivated to implement an N-tier system wherein a software component designer can design or select each software component to perform specified

functionality and ensure that each software component has the interfaces specified by the architecture for that tier (*see Green – Column 2: 48-54*).

As per **Claim 2**, the rejection of **Claim 1** is incorporated; and Sheard further discloses:

- wherein icons are dragged from the palette onto the window, and thereafter connected together, in a topological structure for the multi-tier business application (*see Column 23: 10-15, "... selecting various adapters and components (icons) displayed in the palette ... dragging ... and dropping them onto the canvas (window) ..." and 22-23, "... selected adapters/components may be linked (connected) together ... "*).

As per **Claim 3**, the rejection of **Claim 1** is incorporated; and Sheard further discloses:

- wherein the components are selected from a group consisting of workstations, servers, application files, connections, data paths, user-defined processes, and other user-defined elements (*see Column 24: 55-67, "... distribution planning panel ... provides a tree view of the network environment currently in operation for a selected data integration project ... workstations ... "*; Column 28: 66 and 67 to Column 29: 1-4, "For each workstation participating in a data integration project ..."; Column 29: 18 and 19, "... communication may be effected through use of a sockets type protocol." Sheard discloses a network environment, including servers, workstations, application files (*see Figure 1*), connections (sockets), data paths (*see Figure 5B*), and user-defined elements/processes (*see Figure 20*)).

As per **Claim 4**, the rejection of **Claim 1** is incorporated; and Sheard further discloses:

- wherein the Topological Multi-Tier Business Application Composer is used to perform one or more actions selected from a group consisting of (*see Column 22: 3-5, "The information in the project file is used by the visual interface to render a picture of a data integration implementation (actions) on its canvas."* and 60-62, "... layout of a data integration project is defined within the canvas of the visual interface ..."); creating the tiers involved in the multi-tier business application (*see Column 24: 51-67 to Column 25: 1-16, "The integration of data across multiple platforms and multiple workstations is coordinated through the use of a distribution planning facility ... distribution planning panel ... provides a tree view of the network environment ... workstations ... components ..."*); specifying the components of each of the tiers (*see Column 23: 10-13, "... the user designs a data integration layout when the System Integration view is active by selecting various adapters and components (specifying the components of the tiers) displayed in the palette ..."*); and specifying properties that identify each of the tiers and the components of the tiers (*see Column 25: 17-22, "The right portion of the distribution planning panel includes a property sheet which is used to show the data associated with a selected item ... property sheet presents configuration data ..."*).

As per **Claim 5**, the rejection of **Claim 1** is incorporated; and Sheard further discloses:

- wherein the IDE further comprises a Meta-model that captures information entered via the Topological Multi-Tier Business Application Composer and that persistently stores the information (*see Column 23: 41-45, "Confirming the integrity of the communication channel established between two adapters is accomplished by comparing the meta-data models of the source and destination adapters and determining whether the models are compatible ..."*);

*Column 29: 32-36, "... meta-model approach is used to provide a system wide specification of object and contained attribute definitions ..." and 51-61, "Storage of the meta-model ... using a file based approach ... Each object definition is contained in a separate file ... Each meta defined class is stored ...").*

As per **Claim 6**, the rejection of **Claim 5** is incorporated; and Sheard further discloses:

- wherein the captured information is selected from a group consisting of information about tiers, workstations, servers, application files, connections, data paths, user-defined processes, and other user-defined elements (*see Column 3: 34-43, "Format neutral data meta-models are employed to model the input and output data requirements (captured information) of disparate systems and system components ..."; Column 6: 27-32, "These component building blocks are graphical representations of various data processing and telecommunications hardware and software elements (tiers, workstations, servers, application files, connections, data paths, user-defined processes, and other user-defined elements) ..."*).

As per **Claim 7**, the rejection of **Claim 5** is incorporated; and Sheard further discloses:

- wherein the Meta-model is updated and kept in synchronization with any updates made to the multi-tier business application via the Topological Multi-Tier Business Application Composer (*see Column 23: 47-51, "... meta-data model which indicates the data that the adapter is expecting to receive and dispatch ..."; Column 24: 19, "... meta-data model issues have been resolved (updated) ..."; Column 25: 44-45, "... updating the charts dynamically ..."*).

As per **Claim 8**, the rejection of **Claim 5** is incorporated; and Sheard further discloses:

- wherein the Meta-model is accessible by other tools (*see Column 23: 41-45, "Confirming the integrity of the communication channel established between two adapters is accomplished by comparing the meta-data models of the source and destination adapters and determining whether the models are compatible (tool compares and determines) ..."; Column 31: 13-36, "Various meta-model conversion utilities (tools) may be implemented ..."*).

**Claims 9-16** are computer-implemented method claims corresponding to the computer-implemented system claims above (Claims 1-8) and, therefore, are rejected for the same reasons set forth in the rejections of Claims 1-8.

**Claims 17-24** are article of manufacture claims corresponding to the computer-implemented system claims above (Claims 1-8) and, therefore, are rejected for the same reasons set forth in the rejections of Claims 1-8.

### ***Response to Arguments***

11. Applicant's arguments filed on February 19, 2008 have been fully considered, but they are not persuasive.

### ***In the Remarks, Applicant argues:***

a) Instead, Sheard merely describes a visual data integration system for visually linking data exchange components so as to visually define a data communications interface, while Green

merely describes the design of a software component architecture for the development of extensible tier software component applications.

Thus, the combination of Sheard and Green does not render obvious Appellants' claimed invention, as amended. Moreover, the various elements of Appellants' claimed invention, as amended, together provide operational advantages over the combination of Sheard and Green. In addition, Appellants' claimed invention, as amended, solves problems not recognized by the combination of Sheard and Green.

***Examiner's response:***

a) Examiner disagrees. Applicant's arguments are not persuasive for at least the following reasons:

First, Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Second, in response to Applicant's argument that there is no suggestion to combine the references, the Examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation for the rejection is found in the references.

Third, in response to Applicant's argument that the various elements of the claimed invention provide operational advantages over the combination of Sheard and Green, the fact that Applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985).

Fourth, Sheard discloses every limitation recited in the claim except the limitation of creating and maintaining a number of tiers, identifying workstations and servers within each of the tiers, and defining processing performed by each tier and its components. Green discloses a system and method for creating architectures to implement an N-tier system wherein a software component designer can design or select each software component to perform specified functionality for that tier. Thus, in view of the teaching of Green, one of ordinary skill in the art would be motivated to modify the visual data integration system of Sheard to implement an N-tier system wherein a software component designer can design or select each software component to perform specified functionality and ensure that each software component has the interfaces specified by the architecture for that tier (see Green – Column 2: 48-54).

Fifth, Sheard is within the field of Applicant's endeavor and hence is analogous prior art because Sheard relates to facilitating the design, deployment, and runtime monitoring of an integrated information system implementation. Green is also within the field of Applicant's endeavor and hence is analogous prior art because Green relates to developing extensible tier software component applications. Therefore, the rejections made under § 103(a) based on the combined teachings of Sheard and Green are proper and therefore, maintained.

*Conclusion*

12. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

13. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Qing Chen whose telephone number is 571-270-1071. The Examiner can normally be reached on Monday through Thursday from 7:30 AM to 4:00 PM. The Examiner can also be reached on alternate Fridays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Wei Zhen, can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/QC/  
May 16, 2008

/Wei Zhen/



Art Unit: 2191

Supervisory Patent Examiner, Art Unit 2191